

## Historic, archived document

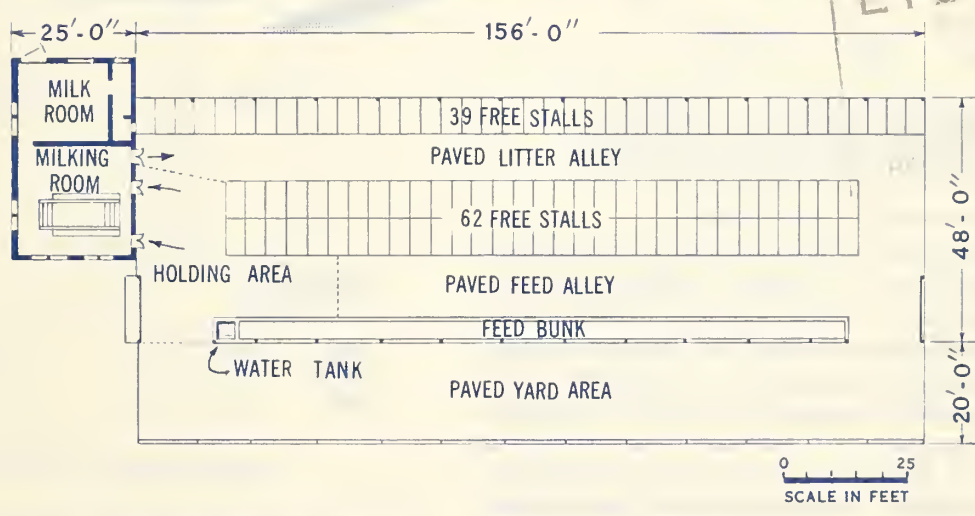
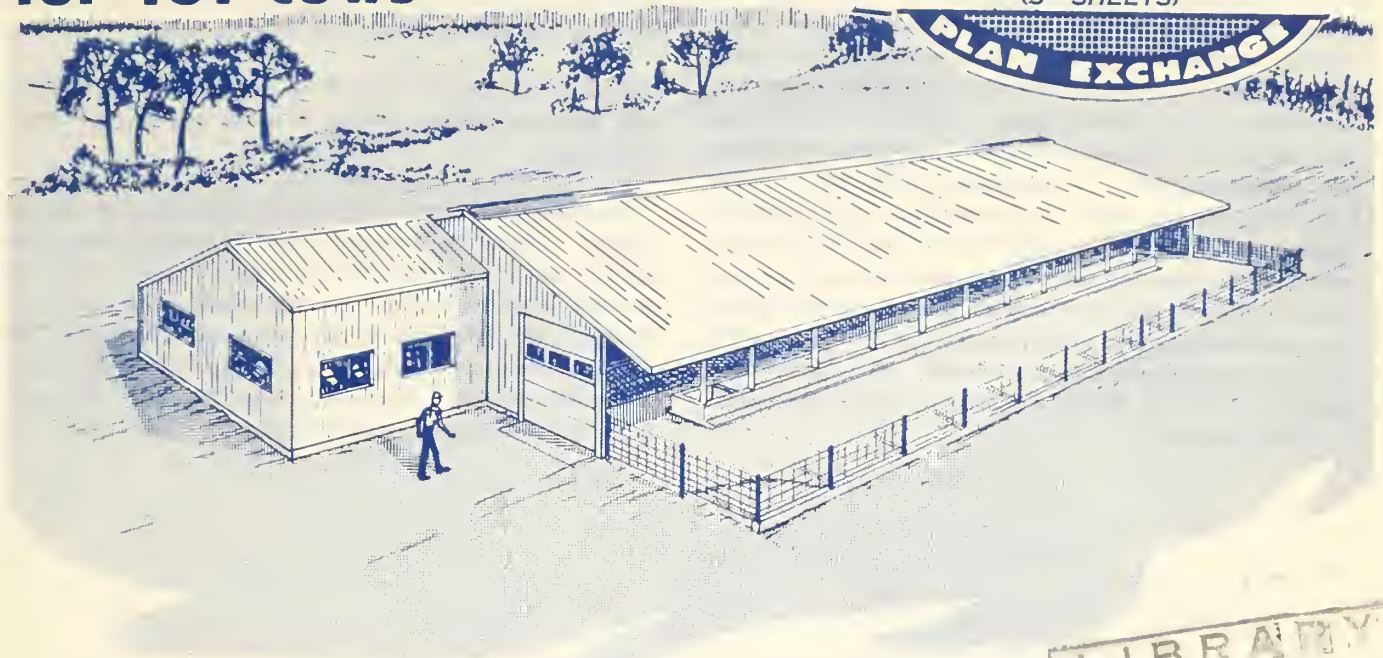
Do not assume content reflects current scientific knowledge, policies, or practices.



1  
 2784M  
 Misc. Pub  
 1037  
 C.1

# FREE - STALL DAIRY SYSTEM

for 101 cows



LIBRARY

Farmers reasonably demand working conditions as good as those provided for workers in other industries. A dairy enterprise must gainfully employ at least two men to provide vacations and time off duty. Two men can operate this free-stall system on a year-round basis, but only one man is required to handle the dairy during weekends and vacations. To accomplish the daily work, one man must mechanically milk cows and handle feed and wastes.

A pipe-line milker with bulk milk tank, a self-unloading wagon, and a tractor-mounted blade were selected to handle materials because these items of equipment can be expanded or altered at reasonable costs. Storage for silage and hay, if used, should be located so that it is convenient to buildings in the free-stall system but not where it may prevent expansion of the buildings. Cow traffic must be controlled so that one man can clean and feed without interference from animals.

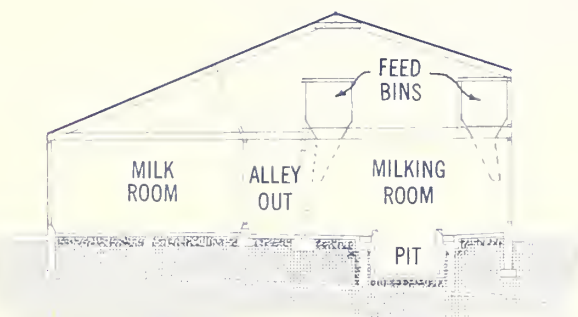
Washington, D.C.

September 1966

UNITED STATES DEPARTMENT OF AGRICULTURE      Miscellaneous Publication No. 1037

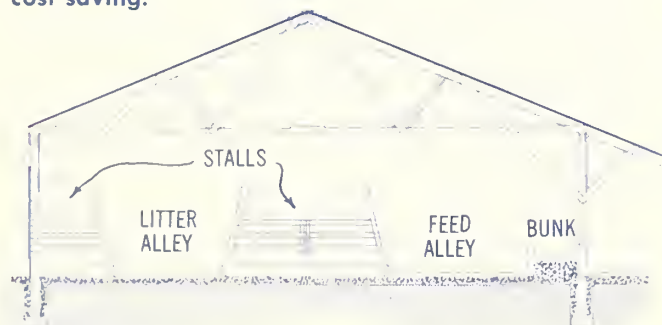
The milking center is offset from the housing barn to allow drive-through wagon feeding and to simplify framing of the roof. The feed bunk space is large enough for a total corn silage or a green-chop and haylage roughage program and allows for future installation of automatic feeding equipment. If desirable, hay can be fed in racks along the outside of the paved yard.

Milk production by dairy animals is not adversely affected by low temperature that normally occurs during winter in the United States. Therefore, the resting and feeding areas can be a cold house—a low-cost, uninsulated structure. A clear-span, pole-type building fulfills this need. The straight-through design and the location of poles in the feed bunk wall permit easy cleaning of alleys by use of a tractor-mounted manure scraper. The 7-foot overhang on the front of the building provides rain and snow protection for the animals feeding from the outside of the bunk. Structural framing and ventilation details are shown on the large-scale working drawings.



*A section through the milking plant*

The milking center is constructed with conventional wood framing and is fully insulated to allow economical use of electrical heat. The double-4 herringbone milking room is compact and efficient for one-man milking. Overhead storage of concentrates and details of the construction required to support the feed are shown on the working drawings. A portion of the resting and feeding area is fenced off and used for holding the cows prior to milking. Double use of this space reduces the size of the milking center and provides a substantial cost saving.



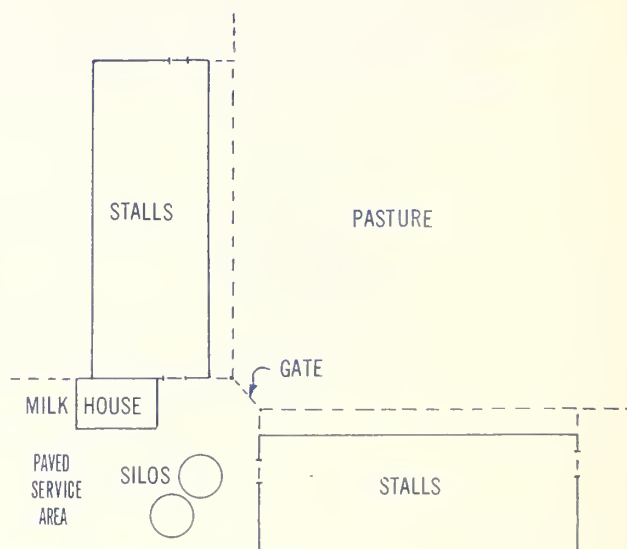
*A section through the free-stall and feeding barn*

## CHORE ROUTINE

The basic design is efficient and uses about the minimum of space for handling 101 milking cows. Cows are held in the cross alley and paved feeding alley while they are waiting to be milked. They leave the milking room and go to the paved litter alley on the back side of the free-stall and feeding barn.

Optional changes should be made only after carefully thinking out the routine of every operation. Plan with care.

One possible layout for future expansion is shown below. Yards can be established in a southeastern or southwestern direction for maximum exposure to the sun and protection from winter wind. The silos are placed to give the minimum mechanization needed for either automatic or wagon feeding, yet they are clear of the driveways. Terrain dictates the best arrangement of buildings, so no one layout fits every site.



*Plan for expansion of the system*

Before starting construction, the plans for any dairy facility should be checked for compliance with all applicable regulations regarding location, construction, and sanitation for the milkshed in which the enterprise is to be located.

## HOW TO ORDER WORKING DRAWINGS

Complete working drawings may be obtained from the extension agricultural engineer at your State university. There may be a small charge to cover cost of printing.

If you do not know the location of your State university, send your request to Agricultural Engineer, Federal Extension Service, U.S. Department of Agriculture, Washington, D.C. 20250. He will forward your request to the correct university.





